



Chatbots for FAQ

Shashank Maheshwari¹, Rohit Khandelwal², Ms. Kusum Yadav³

¹Student, Department of Information Technology, JECRC, Jaipur, India

²Student, Department of Information Technology, JECRC, Jaipur, India

³Assistant Professor, Department of Information Technology, JECRC, Jaipur, India

ABSTRACT

Chatbot is a product application used to direct an on-line talk discussion by means of text or text-to-discourse, in rather than giving direct contact a live human. A FAQ (Frequently Asked Questions) chatbot is a sort of web bot or programming application that is valuable for responding to the absolute most often posed inquiries your clients might have. FAQ bots assist with guiding clients to the right site pages and give answers effectively any season of the day. The paper addresses the present scenario of bots for FAQs. In this paper we provide a review on research and development on FAQ chatbots.

Keywords :- Chatbot, FAQ, NLP, Chatbot Architecture.

[1] INTRODUCTION

The PC has made everyone's life more straightforward. The most significant part of software engineering today is having the capacity of mental advances and giving mechanization to save the time, a fundamental ability forever. A FAQ chatbot is a program intended to respond to normal inquiries individuals have to them. FAQ Chatbot perceive the client input as well as by utilizing design coordinating with the FAQ information base, access data to give a predefined affirmation. For model, on the off chance that the client is giving the bot a sentence like "What is the Help Email address?" in this part chatbot gives out the mail address to contact the respective support. At the point when the info is creating in the data set, a reaction from a predefined design is given to the client. A FAQ Chatbot is executed utilizing design looking at, in which the request of the sentence is perceived and a saved reaction design is acclimate to the select factors of the sentence. "They can't enlist and answer complex inquiries, furthermore, can't perform compound exercises, what FAQ answer it is all relies upon the profundity and the volume of information data set". "Chatbot is generally a new innovation. The use of a Chatbot should be visible in different fields from now on. This paper covers the strategies used to plan and execute a FAQ Chatbot. Examinations are made, discoveries are talked about and end is drawn toward the end".

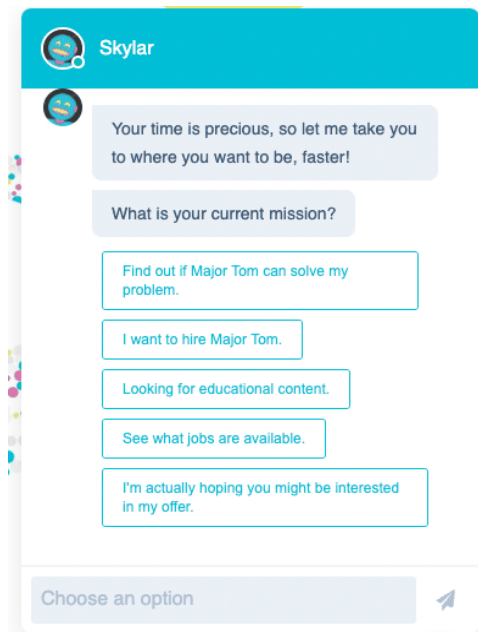


Fig 1: Chatbot Interface

Important facts to remember while designing and developing a FAQ Chatbot for better user experience.

A. Make it Human-friendly

Get ready and choose a symbol for chatbot that is fascinating. It tends to be a genuine human or it very well may be your image logo or mascot. Make the ability more valid by remembering the manner in which the bot asks and addresses inquiries. Chatbot mentality ought to continuously be proficient, however remember that this is a discourse. Guarantee that normal language is utilized and attempt to add some character into the reactions.

B. Give it a Personality

Recall that language gives character. The style of exchange used will frame the personality of your business and group itself. Saying that "This is a chatbot is fine". In some cases, go about as to be a human can misfire and raise startling assumptions. The chatbot will have its own way of connecting and individuals are utilized to it at this point. Adding delays between messages won't tackle the genuine issue, which is client cooperation and information gathering.

C. Keep the Conversation simple

Adopt an immediate strategy to planning your discussions. On the off chance that you present a great deal of fanning or hopping between messages, it can ultimately prompt client disappointment. The chatbot should be "not difficult to-use" than being keen. The bot cannot resolve every one of the issues or questions that your potential client might have. However, as long as keeping them drew in, get the chance to grasp their contact data and hit them up later.

D. Fewer typing, more clicking

A chatbot that requests that the client type a great deal, then that for the most part prompts lower finish rates. The suggestions should be given for next question after answering the previous one. The more space given to the client to type an enquiry, the more space chatbot bought to be. But then, there might be a long way from getting

the information that really wanted. To create some distance from the customer methodology of text-based enquiries to the more enquiries like multi choice, range sliders, gadgets and so on. Clients can basically click and pick their responses. Organized answers assist with smoothening the combination interaction with different apparatuses in your work process.

E. Let it tie the Brand

Everything about the bot should match your brand image, from the personality of the bot to the colours you choose for the text. Brand should be reflected on each step of conversation.

[2] RELATED WORK

On creation of chatbot utilized Rule-NLP Crossover FAQ Bot utilizing Java programming language. The design of a FAQ Chatbot is represented using Figure 2 as follows:

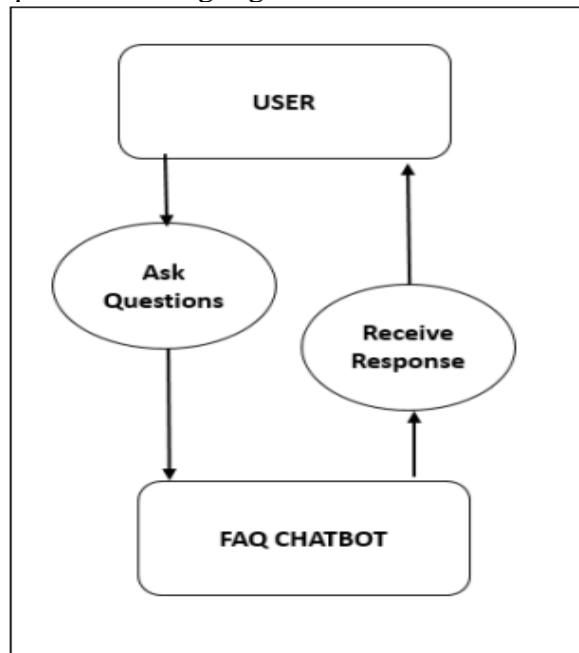


Fig 2: Use Case Diagram

Java Applets are utilized in light of the fact that it is not difficult to make the exchange box required for the discussion between. The client and the bot. inside it utilize any NLP (Natural Language Processing) framework to understand the human questions and answer back with significant data.

Implemented bots has been defined as below:

a. Hospital Assist

The major objective of hospital bot is to explain the importance of medical chatbots and present our developed medical chatbot, developed on internet technologies. Chatbot assists user queries regarding hospital information, including specialists’ availability, OPD timings, room registration, number of beds, emergency information, and doctor availability, among others.

b. E-learning Bot

It is about promoting the use of inclusive learning designs, such as universal design, to protect the inherent learning rights of individuals with cognitive disabilities, Next is technical elements that relate to Web Content Accessibility Guidelines. Another aspect is about the user experience ensuring that activities inside a MOOC are feasible for students through a proper user interface and pedagogical design. The last aspect is about an overall quality that concerns multiple components in a course, including staff and student support, curriculum design, course design, delivery, and assessment.

c. University bot

Chatbot is implemented to meet the academic needs of the visitors. It will help the student to fetch information like ranking of university, availability of services, university environment, updates regarding activities happening inside campus and many more and other academic information.

A. Basic Design Techniques and Approaches

a. Database

Information data set is the key for FAQ Chatbot. Two layered string exhibits are applied to construct an information base.

Columns in the cluster are utilized for solicitation and reaction. All the even lines contain the questions and all the odd columns contain the reaction or replies. Sections in the exhibit are applied to save various kinds of enquiries that could asked by the client and reactions that a FAQ Chatbot can reply. There is one column in the cluster which contains default reactions which is utilized while the coordinating question isn't tracked down in the exhibit.

b. Dialog Box

Every one of the bundles expected for making the discourse box are imported. The size of the discourse box and text region inside the discourse box is given. Vertical scrollbar is utilized so that the screen is looked as the discussion goes on. Flat scrollbar is never utilized in light of the fact that the size of the discourse box is fixed.

[3]COMPARATIVE ANALYSIS

The designed FAQ Chatbot is very simple and user friendly. The present work has been conducted with an aim to save time and energy of the administrative staff as well as facilitate access to information. As per the need of developer or the user, the required requests and responses can be stored in the database. By Changing dataset FAQ Chatbot can be used in any kind of FAQ operations.

Table 1: Comparative analysis

S. No.	Author	Year	Proposed Work	Result
1.	Mamta Mittal, PhD: Gopi Battineni, PhD: Dharmendra Singh, BTech	2021	Presented framework and functionality of a chatbot developed using web technologies. The bot engine was integrated by several machine learning approaches like gradient descent (GD) and natural language processing (NLP)	The employed ML algorithms were successfully incorporated to manage the alternative synchronisation of text and voice messages.

			algorithms.	
2.	Farhana Sethi, PhD	2020	Inproposed solution used Rule-NLP Hybrid FAQ Bot using Java programming language. Java Applets are used because it is easy to create the dialog box required for the conversation between.	FAQ ChatBot uses simple pattern matching to represent the input and output whereas other ChatBots uses input rules, keyword patterns and output rules to generate a response.
3.	Eleni Adamopoulou, Lefteris Moussiades	2020	The general architecture of modern chatbots while also mentioning the main platforms for their creation. Chatbots are no longer seen as mere assistants, and their way of interacting brings them closer to users as friendly companions.	Minimal human interference in the use of devices is the goal of our world of technology.
4.	Yasunobu Sumikawa, Masaaki Fujiyoshi, Hisashi Hatakeyama, Maahiro Nagai	2020	Proposed framework for supporting dataset creation. This framework provides two recommendation algorithms: creating new questions and aggregating semantically similar answers.	Introduce a novel framework for supporting chatbot dataset creation specifically for an e-learning system.
5.	Songhee Han, Min Kyung Lee	2022	Study examines student's unique experiences of using an FAQ chatbot as compared to an FAQ webpage, and investigates whether and how demographic factors influenced the chatbot users.	Used the Mann-Whitney UU test to examine significant mean differences between the groups. Compared the mean ranks of the four scores per group and investigated the possible unique experiences.
6.	Atsushi Otsuka, Kyosuke Nisida, Katasuji Bessho, Hisako Asano, Junji Tomita	2018	Used a CQA dataset for the model learning. The CQA is a social platform that enables users to post questions to be answered by other users later. Created a ranking metric network to find expert users using a recurrent neural network.	An Encoder-Decoder based query expansion model that generates additional keywords for considering an answer document from the input queries in FAQ retrieval.
7.	Jiwoon Jeon, W. Bruce Croft, Joon Ho Lee	2005	Used the translation model to retrieve relevant questions given short queries in the topics produced for the collection. User searches only the question title fields. Similarities between the query question and the question titles in the collection are calculated.	Show that a question-and-answer archive from a community-based Q&A service can serve as a valuable resource to train retrieval models that can recognize semantically similar questions.
8.	Bhavika R. Ranoliya, Nidhi Raghuwanshi,	2017	Developed a interactive chatbot for University related Frequently Asked	Chatbot is implemented to meet the academic needs of the visitors.

	Sanjay Singh		Questions (FAQs), and the work flow of proposed framework. User inquiries are first taken care by AIML check piece to check whether entered inquiry is AIML script or not.	Help the student to fetch information like ranking of university, availability of services many more and other academic information.
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[4]FUTURE SCOPE

Chatbots are man-made brainpower frameworks that connect with clients through informing, text, or discourse. Chatbots can work in sections like promoting, instalments and handling, and administration. Today, customers are requesting nonstop help for help with regions running from banking and money, to wellbeing and health. The expected advantages of Chatbots frequently miss the mark due to their famously mechanical language, firmness and trouble in figuring out the expectation and subtlety of language. Client experience requests a steady, clear and centred character that emulates human connection and makes them feel quiet. Looking forward to the future extent of chatbots, bots need to additionally foster their NLP and capacity to go off-script.

[5]CONCLUSION

Comparative Analysis from the **table 1**, this paper concludes the plan of a FAQ chatbot, which gives an effective and precise solution for any question in view of the dataset of FAQs. The minimum use of human efforts is the goal of the technology. It gives the use of chatbot in various fields like Hospitals, Universities, E-learning platforms. In this paper, data about the plan, execution of the FAQ chatbot has been introduced that is simple, friendly and conversational.

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[2] METHADODOLOGY

[3] EMPIRICAL RESULTS AND DISCUSSION

[4] CONCLUSION

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